



NFCC
National Fire
Chiefs Council

The professional voice of the
UK Fire & Rescue Service

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National Planning Policy Framework and National Model Design
Code: consultation proposals
Ministry of Housing, Communities and Local Government
Planning Directorate
3rd Floor NE, Fry Building
2 Marsham Street
London
SW1P 4DF

Sent via email to:
PlanningPolicyConsultation@communities.gov.uk

26 March 2021

To the Ministry of Housing, Communities and Local Government,

**RE: National Planning Policy Framework and National Model Design Code:
Consultation proposals**

Please find attached the National Fire Chiefs Council (NFCC) response to the open consultation published on 30 January 2021 '*National Planning Policy Framework and National Model Design Code: consultation proposals*' concerning views on the draft revisions to the National Planning Policy Framework, and the draft National Model Design Code.

NFCC is the professional voice of the UK fire and rescue services (FRS) and is comprised of a council of UK Chief Fire Officers. This submission was put together by NFCC's Protection Policy and Reform Unit (PPRU).

NFCC supports the intent behind the draft proposals to deliver the main findings of the [Living with beauty: report of the Building Better, Building Beautiful Commission - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/91221/living-with-beauty-report-of-the-building-better-building-beautiful-commission.pdf), namely the promotion and increase in use of high-quality design for new build homes and neighbourhoods, with a focus on living with beauty, promoting health and wellbeing, as well as sustainable growth.

However, the safety for residents, occupants, the wider community, and firefighters alike needs to be acknowledged and considered at the earliest possible stage. NFCC considers that, in this regard, the draft [National Model Design Code](#) currently falls significantly short in a number of areas relating to fire/emergency service access, water supplies for firefighting installations and fire service use and how this guidance links with the requirements of and ongoing revisions to the building regulations and associated approved documents, especially

given its purpose of *'providing detailed guidance on the production of design codes, guides and policies to promote successful design'*. It is in response to comments requested under question 15 of this consultation on the National Model Design Code, that NFCC will focus its response, we feel other questions are best left for others better placed to comment.

Interaction between planning and other regulatory functions

NFCC has previously identified concerns over the lack of understanding of the interaction between planning and other regulatory functions. These concerns are provided in our responses to:

- The open consultation *'Supporting housing delivery and public service infrastructure'* published on 3 December 2020.
- The consultation paper *'Planning for the Future'* published on 6 August 2020.

The proposed changes to the National Planning Policy Framework and the draft National Model Design Code should not be carried out in isolation to other regulatory functions and supporting guidance, as they are inextricably linked, with planning being the initial stage for stakeholders and regulators to engage on the proposals.

NFCC believes it is necessary to highlight the misconception from applicants that planning permission is the only approval they need to build. Planning permission does not demonstrate compliance with the Building Regulations (as amended) or the Regulatory Reform (Fire Safety) Order 2005 (FSO). It also cannot be used to demonstrate compliance with new requirements proposed by the draft Building Safety Bill. After achieving planning permission, developers should also consult a Building Control Body. However, the experience of our members suggests a number of owners/developers are not following this process.

Updated guidance to accompany the proposed changes to the planning framework should also be explicit in outlining the requirements for the provision of suitable firefighting water / media, as well as access and facilities for the FRS (which should be in accordance with the functional requirement B5 of schedule 1 of the Building Regulations 2010 (as amended)).

We trust the attached submission is helpful and welcome further discussions following the outcome of the consultation: PPRUAdminTeam@nationalfirechiefs.org.uk

Yours sincerely,

Dan Daly



NFCC Head of Protection Policy and Reform Unit

Respondent Details

This section of the survey asks for information about you and, if applicable, your organisation.

Respondent details																											
First name	Dan																										
Last name	Daly																										
Email address	PPRUAdminTeam@nationalfirechiefs.org.uk																										
Are you responding on behalf of an organisation or as an individual? *	Responding on behalf of the National Fire Chiefs Council (NFCC)																										
Organisation (if applicable)	National Fire Chiefs Council																										
Position in organisation (if applicable)	Head of Protection Policy and Reform Unit, National Fire Chiefs Council																										
Please indicate whether you are replying to this consultation as a: *	Professional organisation																										
<table border="1"> <tr><td>Developer</td><td></td></tr> <tr><td>Planning consultant</td><td></td></tr> <tr><td>Construction company or builder</td><td></td></tr> <tr><td>Local authority</td><td></td></tr> <tr><td>Statutory consultee</td><td></td></tr> <tr><td>Professional organisation</td><td>✓</td></tr> <tr><td>Lawyer</td><td></td></tr> <tr><td>Charity or voluntary organisation</td><td></td></tr> <tr><td>Town Council</td><td></td></tr> <tr><td>Parish Council</td><td></td></tr> <tr><td>Community group, including residents' associations</td><td></td></tr> <tr><td>Private individual</td><td></td></tr> <tr><td>Other (please specify):</td><td></td></tr> </table>	Developer		Planning consultant		Construction company or builder		Local authority		Statutory consultee		Professional organisation	✓	Lawyer		Charity or voluntary organisation		Town Council		Parish Council		Community group, including residents' associations		Private individual		Other (please specify):		
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Address (including postcode)	99 Vauxhall Road, Birmingham, B7 4HW																										

Chapter 2: Achieving sustainable development

Q1. Do you agree with the changes proposed in Chapter 2?

NFCC consider we are not best placed to answer this question.

Chapter 3: Plan-making

Q2. Do you agree with the changes proposed in Chapter 3?

NFCC consider we are not best placed to answer this question.

Chapter 4: Decision making

Q3. Do you agree with the changes proposed in Chapter 4? Which option relating to change of use to residential do you prefer and why?

NFCC consider we are not best placed to answer this question.

Chapter 5: Delivering a wide choice of high quality homes

Q4. Do you agree with the changes proposed in Chapter 5?

NFCC consider we are not best placed to answer this question.

Chapter 8: Promoting healthy and safe communities

Q5. Do you agree with the changes proposed in Chapter 8?

NFCC consider we are not best placed to answer this question.

Chapter 9: Promoting sustainable transport

Q6. Do you agree with the changes proposed in Chapter 9?

NFCC consider we are not best placed to answer this question.

Chapter 11: Making effective use of land

Q7. Do you agree with the changes proposed in Chapter 11?

NFCC consider we are not best placed to answer this question.

Chapter 12: Achieving well-designed places

Q8. Do you agree with the changes proposed in Chapter 12?

NFCC consider we are not best placed to answer this question.

Chapter 13: Protecting the Green Belt

Q9. Do you agree with the changes proposed in Chapter 13?

NFCC consider we are not best placed to answer this question.

Chapter 14: Meeting the challenge of climate change, flooding and coastal change

Q10. Do you agree with the changes proposed in Chapter 14?

NFCC consider we are not best placed to answer this question.

Chapter 15: Conserving and enhancing the natural environment

Q11. Do you agree with the changes proposed in Chapter 15?

NFCC consider we are not best placed to answer this question.

Chapter 16: Conserving and enhancing the historic environment

Q12. Do you agree with the changes proposed in Chapter 16?

NFCC consider we are not best placed to answer this question.

Chapter 17: Facilitating the sustainable use of minerals

Q13. Do you agree with the changes proposed in Chapter 17?

NFCC consider we are not best placed to answer this question.

Annex 2: Glossary

Q14. Do you have any comments on the changes to the glossary?

NFCC consider we are not best placed to answer this question.

National Model Design Code

Q15. We would be grateful for your views on the National Model Design Code, in terms of

- a) the content of the guidance**
- b) the application and use of the guidance**
- c) the approach to community engagement**

1. NFCC considers the draft *National Model Design Code* (“the Code”) to fall short of identifying and acknowledging key parameters and providing the detail to achieve its purpose. NFCC recognises the importance of the Code and its purpose to provide a clear framework in setting out the parameters that contribute to good design and a step-by-step process for local authorities to follow to produce their own local codes and guides.
2. On 1 February 2021, the Rt Hon Robert Jenrick, Secretary of State for Housing, Communities and Local government, stated ‘*Whereas a design guide sets out high level principles of good design, a design code sets out illustrated design requirements that provide specific, detailed parameters or constraints for the physical development of a site or area*’ (Available at: [Written statements - Written questions, answers and statements - UK Parliament](#)). NFCC considers our comments below identify areas that need to be included in the code to achieve the purpose and objectives.

a) the content of the guidance

Fire appliance access

3. NFCC believes additional mentions of emergency vehicle access would be appropriate given its importance. The code only mentions emergency vehicle access once:

No.58 (v) ‘*Servicing: New development should integrate the requirements of utility providers, refuse collection and emergency access without compromising the quality of place by obstruction of movement or visual intrusion. See M.3.iii Services and Utilities*’. (Page 29)

4. Figure 2 on page 7 Design Code Coverage has no mention of emergency vehicle access.
5. The *Guidance Notes for Design Codes* also contains limited information and acknowledgement of emergency vehicle access:
 - *Emergency services ‘All developments need to be accessible to emergency vehicles. Sites with limited vehicle access points need to ensure that ambulances and fire tenders can gain access if one of the roads is blocked. This can be a particular problem with unregulated on-street parking’* (Page 16 para 55).
 - *Refuse Collection* identifies the need to take account of access for refuse collection and emergency vehicles and then identifies the size of refuse collection varies between local authorities (Page 16 para 56). There is no mention of varying sizes of emergency vehicles or the need for it to be considered.
 - *Local and Secondary Streets ‘Providing for emergency access and servicing, including access for emergency services, accommodating refuse storage and collection and allowing deliveries’* (Page 56 para 136).
6. Given the importance of fire appliance (and other emergency vehicle) access requirements, NFCC considers the identification and acknowledgment above to be insufficient, and believes more information is required.
7. Of additional concern is the reference regarding active travel in the *Guidance Notes for Design Codes*, which states:

'This sets out that in designing streets, the needs of pedestrians and cyclists should be considered first, then public transport, service and emergency vehicles and only then motor vehicles'. (Page 11 Para 32)

8. This implies that the need to provide suitable and sufficient access for fire appliances is considered via a hierarchy, which may result in insufficient access being provided. The need to provide access for fire appliances is covered under Schedule 1, Part B Fire Safety, B5 Access and facilities for the fire service of the Building Regulations (as amended), which is a statutory requirement for the Building Control Body to be able to demonstrate at Building Regulations stage. This identifies and highlights the disconnect between planning and other regulatory functions which is discussed further below under Part b of this question and *Interaction between planning and other regulatory functions*.
9. The [Manual for Streets](#) is referenced in the Code and contains prescriptive guidance on fire appliance access. However, the Manual is limited in content and does not address the important issue of potential differing sizes (and weight limits) for fire appliances across UK FRs. NFCC considers the 2007 Manual (alongside the *Manual for Streets 2*) should be revised to accommodate these important points and ensure they sufficiently support the Code (where their importance should also be identified). Of further note, the [National Design Guide](#) contains only one passing reference to emergency vehicle access.
10. The ongoing [Technical review of Approved Document B workplan](#) identifies many areas of research that will have an impact on planning proposals, specifically access and facilities for the fire and rescue service, as much of the technical information is sourced from Approved Document B (ADB). The review and revision of the planning codes and guidance above will need to consider the ADB review in not only bringing the technical guidance up to date, but for it to be reviewed again when the ADB review is complete.
11. Another area of ambiguity is the requirement for access for a fire appliance within 45m of the building. Guidance is required for hose laying distances to avoid interpretations that are driven by convenience rather than best practice and should stipulate suitable routes for firefighters to lay a hose (for instance, not point to point on a map, or on the other side of a motorway).
12. To be effective in purpose and achieving its objectives, NFCC considers the following subjects also need to be acknowledged and identified alongside firefighting appliance access within the Code (primarily) as well as supporting guidance and referenced documents.

Provisions for water for firefighting

13. NFCC believes that any revisions to the planning system and draft codes and guidance should be carried out with an overhaul of the guidance in the provision of water for firefighting. This is an area that requires fundamental revisions, such as:
 - A requirement for an adequate firefighting water provision to be included in Local Plans (as informed by the draft Code). It should be necessary for any Local Plans to include a confirmation that an adequate supply of firefighting water exists for any premises. Where this cannot be confirmed, it should be highlighted for any development that this will need to be provided as part of the initial grant of outline planning permission. This may increase the resilience of the proposals for a Fire Statement outlined in the *Building a Safer Future*¹ report as it would ensure adequacy

of water supplies for all developments, not just those within the scope of the future Building Safety Regulator.

- An express requirement that all planning approval for buildings, no matter the size or usage, have an adequate water supply for firefighting. This would normally be provided by the provision of hydrant(s) attached to a suitable size main delivering an appropriate flow rate for firefighting but may also be complemented or provided by storage tanks, open water sources, or a combination.
 - Clearer specification of appropriate pressures and flow rates.
14. Current guidance for the provisions for the supply of water for firefighting is too vague and does not ensure appropriate supplies of water for firefighting are achieved. Guidance and codes accompanying the proposed changes to the planning system should be explicit in these provisions as currently they are only outlined in ADB in support of the Building Regulations. As such, NFCC believes that guidance for planning should set out requirements in this area.
15. Whilst water supply may not be an issue for some premises in areas where existing infrastructure is available, for new development sites of multiple dwellings in large premises or in areas where infrastructure is minimal, appropriate provisions need to be made. The Building Regulations state that *'[a] building shall be designed and constructed so as to provide reasonable facilities to assist firefighters in the protection of life'*. This is open to interpretation as it does not qualify what is reasonable or if this requirement extends beyond the fabric of the building to hydrants, fire suppression systems, water storage tanks and open water supplies. This lack of clarity coupled with a lack of responsibility on developers to provide appropriate water provisions creates a significant challenge for fire services.

Fire Hydrants

16. It is noted with great concern that there is no requirement or reference to assess the suitability of any existing hydrants for firefighting. The presence of a hydrant within 100m is deemed to be enough to meet the standards, whereas the reality is it may not deliver the required flow rate as outlined in the [National Guidance Document on Water for Firefighting 2007](#), which needs updating and preferably elevated to a recognised legal position.
17. It is a major concern that premises are being built without provision for water for firefighting and those dwellings are being inhabited. This lack of provision of water for firefighting poses other challenges e.g., where premises are being developed under permitted development rights (PDR) and have no size limit and are considerably large, this puts firefighters and occupants at increased life risk, where the water provision is inadequate.
18. The deregulation of the water industry has led to major challenges in ensuring appropriate provisions of water for firefighting. FRSs have seen a sharp increase in the numbers of self-lay or inset companies laying water mains with little or no involvement of the water undertaker, and no consultation with the FRS.
19. This can be compounded by water undertakers using 63mm pipes which are unsuitable for affixing hydrants. The connection point of a fire hydrant has an 80mm bore. There is a growing tendency for water undertakers to install 63mm pipes which can halve the output of water through a fire hydrant. There is an increased cost if

hydrants must be retrofitted. Currently this cost falls on FRSs when the main is adopted by the water undertaker. There may also be challenges installing hydrants to an appropriate main for firefighting, which could ultimately lead to a new main being required, the installation costs for which potentially get charged back to the FRS. The costs can reach hundreds of thousands of pounds. For one site alone, this could exhaust or significantly exceed the annual budget for hydrant repair and installation for almost all FRSs.

Water undertakers

20. The Water Industry Act 1991 places a duty on water undertakers to install hydrants where requested by the FRS, but the cost for these falls to the FRS for statutory hydrants, not to the developer. The costs associated with providing appropriate water supplies, including hydrants, should be part of the development costs and not be the responsibility of FRSs, given the profitability of development projects.
21. The Town and Country Planning Act 1990 (TCPA) currently provides recourse for developers to be subjected to planning obligations or to make contributions to the cost of any infrastructure required to service a new development. This legislation has been successfully applied to the provision of hydrants by a small number of FRSs, however, it requires close working with the local Planning Authority as this is a planning condition. The application of this can be arduous for FRSs, such as the London Fire Brigade, which has 33 Planning Authorities within its area. The provision of hydrants and the financial burden of installing them on such new development sites is falling to FRSs which, in turn, puts strain on already stretched public funds. This seems outside of the spirit of the legislation, especially given the size and profitability of these developments. NFCC considers the installation of an appropriate number of hydrants would add a negligible additional cost to many development projects.
22. Assuming the water mains serving the development are either owned by the local water undertaker or adopted by them, the FRS would then take on the responsibility for the inspection and maintenance of any hydrants attached to those mains. It would therefore be welcomed if the provisions for infrastructure on new developments, such as hydrants, could consolidate the guidance and requirements for land that is to be zoned for growth or regeneration.
23. It should be a requirement for all developments, no matter the size or usage, to have an adequate water supply for firefighting. This would normally be provided by the provision of hydrant(s) attached to a suitable size of water main delivering an appropriate flow rate for firefighting, but it may also be complemented or provided by fire suppression systems, storage tanks, open water sources, or a combination thereof. The consolidation of Section.106 of the TCPA into the Building Regulations would significantly assist in achieving the fundamental aim to ensure adequate water supplies.
24. Water undertakers and companies can be inconsistent in notifying the FRS when the statutory fire hydrants they have requested have been installed and are operational for firefighting. This is also true for private fire hydrants that have been requested by the FRS from the developer of the site. This risks properties being inhabited without the local FRS being told hydrants have been installed. In such cases, if there is a fire, FRS fire crews can struggle to locate the hydrants to access water for firefighting. This is compounded by water undertakers not fitting the correct British Standards 750 compliant FH cover on the asset, which can cause Fire Crews confusion and therefore delays in accessing water. The risk is even greater on phased schemes,

which are increasingly common. Often a phase is finished, the properties are sold and inhabited, but the FRS has no fire cover from fire hydrants in place.

25. Finally, there is also concern that legislation and / or set performance targets may be driving the wrong incentives for water undertakers, leading to a significant reduction of water available in the network for firefighting. Whilst there are clear responsibilities for water undertakers to support FRSs by boosting water supplies at incidents, in reality this takes time to implement and may not be achievable based on the age and configuration of the water undertaker network. Water undertakers are still most concerned about taking customers out of supply, or possible discoloration issues, even if the Fire and Rescue Service Act 2004 Chapter 21, Part 5 Section 40 states they cannot suffer penalties for discharging responsibilities under this legislation. It would therefore be helpful if the relevant part of the aforementioned legislation could also be captured in the Water Industry Act.

NFCC would like key performance requirements for water undertakers in relation to supporting the FRS to be introduced, to set clear standards on transparent and reasonable price setting, repair and maintenance responsibilities, and better support FRSs effectively on the fireground. Doing so would be in line with Ofwat's vision to make the greatest contribution possible to improving life through water.

Automatic water suppression systems

26. The water supply issues, as outlined above, may not always be resolvable in premises development. Any guidance and codes written to support planners should seek to qualify water supply issues and look to mandate the provision of automatic water suppression systems (AWSS) in appropriate circumstances where wider issues with water carriers may not allow minimum standards to be met, the provision of water for firefighting can be complemented by the provision of AWSS.
27. Developments and important infrastructure can also be enhanced by the proven benefits and performance of AWSS in saving lives, protecting property and reducing the environmental impact / sustainability of developments (see below) in the event of a fire. As such, NFCC believes their inclusion within updated planning guidance and the Code is a fundamental need.
28. In 2017, NFCC and the National Fire Sprinkler Network jointly published the report '*Efficiency and Effectiveness of Sprinkler Systems in the United Kingdom: An Analysis from Fire Service Data*'.
29. The report presented the following headline results:
- Sprinkler systems operate on 94% of occasions, demonstrating very high reliability.
 - When they operate, they extinguish or contain the fire on 99% of occasions.
 - In both converted and purpose-built flats sprinklers were 100% effective in controlling fires.
30. In 2019 further research was conducted into the performance of sprinkler systems in protecting life and reducing the incidence of harm. The full 2017 report can be read [here](#) and the follow up 2019 report can be read [here](#). A reduction in the effectiveness and timeliness of the consultation process will adversely affect any consideration for the benefits of installing these proven systems.

b) the application and use of the guidance

31. NFCC has concerns regarding how the Code may be applied, without a full understanding of how some decisions will have consequences further along the regulatory framework line and current sector concerns around current design and construction techniques and emerging technology.

Interaction between planning and other regulatory functions

32. NFCC believes the current system would be enhanced by ensuring the planning process and guidance is not carried out in isolation to other regulatory functions and supporting guidance, as they are inextricably linked. Planning is the initial stage for stakeholders and regulators to engage on the proposals of a wider regulatory regime.
33. NFCC believes it is necessary to highlight the misconception from applicants that planning permission is the only approval they need to build. Planning permission does not demonstrate compliance with the Building Regulations (as amended) or the Regulatory Reform (Fire Safety) Order 2005 (FSO). It also cannot be used to demonstrate compliance with new requirements proposed by the draft Building Safety Bill. After achieving planning permission, people should also consult a Building Control Body, however a number of owners/developers are not following this process.
34. The ongoing Technical review of Approved Document B workplan identifies many areas of research that will have an impact on planning proposals, and there are other Approved Documents e.g. parts F (ventilation) and L (conservation of fuel and power) that are also linked to fire safety as identified in our response to *The Future Homes Standard: 2019 Consultation on changes to Part L (conservation of fuel and power) and Part F (ventilation) of the Building Regulations for new dwellings*. In addition and as previously identified, the current 3rd edition of the *National guidance document on the provision of water for fire fighting* is from 2007 and requires reviewing and updating to reflect current regulatory requirements and practices and to ensure that the guidance is fit for purpose.
35. Updated guidance to accompany the proposed changes to the planning framework should be explicit in outlining the requirements for the provision of suitable firefighting water / media, as well as access and facilities for the FRS (which should be in accordance with the functional requirement B5 of schedule 1 of the Building Regulations 2010 (as amended)).
36. Failure to provide effective guidance for planners could result in retrospective works being required, subsequent enforcement action being taken, and premises being provided with insufficient facilities to protect residents, occupants, the wider community and firefighters, placing them at increased risk in event of fire.

Innovation, design and sustainability

37. NFCC supports the move towards increasing the energy efficiency of new homes and community infrastructure and reducing the environmental impact when they are built; this needs to occur while maintaining appropriate levels of safety. Premises need to be constructed to a safe and high standard, notwithstanding the need to create new homes quickly and sustainably. Modern methods of construction (MMC), encompassing different materials and methods, play a key part in providing this much needed housing and infrastructure and are specifically identified within the Code.

However, NFCC has concerns over some of these methods and how their proposed use set out in the codes could lead to issues in the future. It is essential that MMC receive the appropriate level of scrutiny required to demonstrate compliance with the functional requirements of the building regulations. Assurance is needed that fire performance of materials, elements, and systems have been fully considered, have been tested appropriately, and provide the level of safety that residents and firefighters should expect.

38. Competence, as with any building and construction methodology, and its relationship to fire, is critical to delivering safe premises for occupants and firefighters alike. This knowledge and understanding of MMC, and related building safety, should encompass competency throughout a premises' lifecycle and include the planning process alongside design, approval, construction, occupation, management, and any future alteration.
39. The drive for quick, sustainable and higher quality buildings must be balanced with the need to ensure that new and existing building stock achieves a high degree of fire safety. The apparent lack of large-scale fire test research and data, coupled with a period where construction quality and competence has been acknowledged as broken by the Independent Review², does not provide us with confidence that all MMC are receiving the appropriate level of scrutiny needed for such new and innovative approaches. In our view, there should not be a conflict between streamlined planning, sustainability, improved building standards and fire safety. This not only feeds directly into the planning and design process but allows greater understanding of how the building will perform in fire, which in turn enables FRSS to develop their operational response.
40. There have been several high-profile fires across the country, e.g. Barking Riverside, Worcester Park and Beechmere care home in Crewe, where construction methods have been questioned. Investigating and learning from these incidents will contribute to the information required to allow such methods to be safely used when supported and informed with comprehensive, robust, validated and appropriate test data and research.
41. NFCC believes that Government together with the fire and construction sectors still have a long way to go to ensure that the fundamental changes needed are realised. Significant cultural change in the system must take place to improve competency levels across the sector, and to ensure that MMC is promoted and used in a manner which provides safe buildings for all. This commences at the planning stage.
42. It is important the national planning guidance and codes that have a direct bearing on the design of new communities e.g., the updated National Planning Policy Framework, National Design Guide, National Model Design Code and the Manual for Streets; contain appropriate information to inform all involved of the need to consider fire safety at the earliest opportunity. This will ensure fire safety is embedded throughout the process and will inform the proposed localised design guidance and codes.

Car parking and emerging technology

43. NFCC supports the drive towards zero emissions vehicles and the need to review current vehicle parking arrangements to move beyond traditional 'street level parking', this will further support fire appliance access discussed above. NFCC supports measures that will assist the UK to transition to a zero emissions economy and is conscious of the way in which FRSs face emergencies resulting from extreme events linked to Climate Change. However, it is essential that Guidance is updated to allow the transition of the UK fleet to be a safe one. We consider there to be fire safety issues that are not understood regarding alternatives to 'surface parking' i.e., basement, semi basement and car barns, alongside the emerging trend of electrically powered vehicles (EVs).
44. It is a common assumption within guidance that a fire is unlikely to spread to multiple vehicles and ADB states that the fire load is well defined. However as suggested by government commissioned Building Research Establishment (BRE), the [research](#) behind those assumptions are based on "initiation and fire growth involving cars whose designs are decades old". The research document goes on to say that "there has been increasing concern about the consequences of fires in car parks associated with modern car design (e.g. plastic fuel tanks) and how these fires may spread to other vehicles parked adjacently and nearby." While that research was commissioned by the government, no changes have resulted in terms of fire protection measures for car parks within the approved documents.
45. Those assumptions are undermined and proven to be outdated by fires such as that which destroyed approximately 1300 vehicles in Liverpool in 2017 ([Liverpool Echo Arena car park fire photos released - BBC News](#)), or the more recent fire which took place in a multi-storey shopping centre carpark in Douglas, Cork ([Cork: Cars destroyed in Douglas Village Shopping Centre fire - BBC News](#)).
46. Guidance has not kept pace with the extensive use of plastics in vehicles over the last 30 years or so, including plastic fuel tanks, which has significantly changed the way vehicles behave in fire. More modern vehicle design (such as EVs, incorporating high-capacity batteries) should not be subject to the same lag between a significant change in the fire load within buildings (such as basement car parks) and the guidance which is supposed to support their safe design. Where guidance does lag, it may be that buildings are quickly found to be prohibitively dangerous for both their occupants and attending fire crews.
47. Research and innovation with battery technology continues to evolve which means that consideration should be given to how future technologies (e.g. sodium based batteries) may behave in a fire and therefore potentially impact on the built environment as noted elsewhere.
48. Therefore, there needs to be a significant review of guidance such as ADB to consider the impact of vehicles fires in, under and around buildings, with particular focus on:
- Structural fire protection – for example a building such as that in the Liverpool fire was only required under current guidance to perform to a minimum of 15 minutes structural fire protection, as it was open sided. It appears that the structure in this case was built with significantly higher protection than the minimum, yet still there were significant structural failures during the fire. While the structural fire protection requirements for car parks in basements is greater than 15 minutes, they do not account for the fire load of cars with extensive plastics, and nor for the future extensive use of EVs.

- Suppression – because of the out-of-date appreciation of fire load of modern vehicles ADB states that “Car parks are not normally expected to be fitted with sprinklers”. We believe that suppression such as sprinklers is vital, and should be mandated, to allow the suppression and control of fire development to allow for both safe means of escape for occupants (including persons with disabilities) and to allow fire crews to be able to access basement and enclosed levels for firefighting. Basement fires are the most onerous in terms of firefighting and can quickly exceed (by many hundreds of degrees) conditions which firefighters can possibly descend in to. Current and future battery technologies and how they may react in both a fire and to the means of suppression should be properly considered, to ensure that suppression is to an appropriate level. The use of suppression in areas of EV charging should also take account of the need for automatic electrical cut-off in the event of a sprinkler activation to prevent additional hazards relating to water and electricity.

Following a review of this aspect of ADB, where retrospective installation is required in existing car parks, it may be necessary to mandate increased fire protection measures which should include the installation of suppression systems to account for the change in fire load.

- Ventilation – similarly, ventilation is required in car parks to allow for the transportation of products of combustion away from the fire location, which assists control of fire spread and is essential for protecting the lives of firefighters. The current minimum smoke ventilation for car parks (for example 10 air changes per hour for a basement) are likely to be woefully inappropriate for a multiple vehicle fire. Toxicity from failed batteries should also be considered.
- Access and facilities for firefighting – whilst access for firefighting is clearly linked to our expectations in terms of structural fire protection, suppression and ventilation, there are additional firefighting requirements for extensive use of EV. All EV installations should require a mandatory cut off switch for use of fire and rescue services so that power to all charging points within a car park can be isolated with a single action. This will allow firefighters to apply firefighting media (such as water), and to conduct search and rescue safely without power being supplied to the charging facilities. The cut-off switch should be located at the fire service entry point to the car park and may require repeater switches to alternate entry points.
- EV fires require a prolonged period of battery cooling and the most common method is by the continued application of water. The provisions for the supply of water for firefighting within legislation and guidance are too vague, and are deficient in ensuring appropriate supplies of water for firefighting are achieved.

Minimum flow rates are not set in legislation, and rates outlined in national guidance are unrealistic and no longer meet fire and rescue service needs. [The National guidance on water for firefighting](#) published in 2007 requires a review as a priority.

Current average flow rates may be a result of old legacy standards that are no longer fit for purpose.

As such, there is a risk that existing water supplies to some buildings may not be sufficient to safely enable EV charging to be retrofitted. Firefighting water supplies

need to be accessible and sufficient in capacity to be able to support this as well as other firefighting activities (such as protecting adjacent structures from fire spread). Consideration would also need to be made for the drainage and treatment of firefighting water run-off that would be required for the duration of any incident.

- Automatic parking and car stacker systems – a modern solution to lack of space within car parks is to provide a system to automatically (i.e. without a driver) park vehicles, or frames to allow for parking vehicles on top of one another (stacker systems), referred to as ‘car barns’ in the code. Both car stackers and automatic parking systems result in cars being far closer together, either side by side, or on top of one another. These systems significantly increase the potential for, and the speed of, fire spread between vehicles, and common systems such as suppression and ventilation need to be specifically designed to account for that increased potential fire development. These systems will need to be carefully considered to determine if they are appropriate for EVs, and if so, clear guidance incorporated into the required technical revision of ADB.

49. While we have separated elements above into discrete subject areas it should not be read that one allows for the removal of another. It is likely that the extensive use of EVs will require greater minimum technical requirements concurrently for all of the areas above.

50. Wider consideration is needed on how to prepare related infrastructure and the built environment if the Government wishes to safely enable greater uptake of electric vehicles. For example, where sub stations may be required to enhance the existing infrastructure, the impact of associated earthing systems on the surrounding built environment and the applicable separation distances required (and the maintaining of compartmentation), should be factored into the design.

51. The installation of EV charge points may have greater implications on building safety than anticipated. It may be unclear to those undertaking the work whether the building’s existing fire precaution arrangements are sufficient to mitigate the introduction of the additional risk of EV charging, or whether additional measures, are required to be retrospectively installed. There is a danger that in complying with this mandate, those responsible for a building may fall foul of other legislation or unwittingly make their building less safe than it was prior to the installation of the charge points.

c) the approach to community engagement

52. NFCC supports early proportionate and effective engagement between plan makers and communities, local organisations, businesses, infrastructure providers and operators and statutory consultees. This enables us to provide advice at a stage where it can have real effects of the fire safety of a building.

Public Sector Equality Duty

Q16. We would be grateful for your comments on any potential impacts under the Public Sector Equality Duty.

Design principles must ensure they consider the needs of those who may not be able to evacuate without assistance.

The needs of vulnerable groups need to be better reflected within design codes, within Approved Documents and design guides.